

1 ATGCCCGCTGGCATGGCCCGGCGCTGCGGCCCGTGGCGCTGCTCCTTGG 50
||||| ||| |||||||| ||| || | | |||||||| |
1 ATGCTGGCTTGCATGGCCGGGCACTCCAATCAATGGCGCTGTTC...AG 47
51 CTTCCGGCCTCCTCCGGCTGTGCTCAGGGGTGTGGGGTACGGATACAGAGG 100
||||| |||| || |||||||||||||||| | ||| || || |||||||
48 CTTCAGCCTTCTTTGGCTGTGCTCAGGGGTTTGGGAAGTACACAGAGG 97
101 AGCGGCTGGTGGAGCATCTCCTGGATCCTTCCCGCTACAACAAGCTTATC 150
||||||| |||||||||||| | ||||| |||||||| | ||||||| ||
98 AGCGGCTAGTGGAGCATCTCTTAGATCCCTCCCGCTATAACAAGCTGATT 147
151 CGCCAGCCACCAATGGCTCTGAGCTGGTGACAGTACAGCTTATGGTGTG 200
|| ||||| || || |||||||||||||||| | ||||||| ||||| ||
148 CGTCCAGCTACTAACGGCTCTGAGCTGGTGACTGTACAGCTCATGGTATC 197
201 ACTGGCCAGCTCATCAGTGTGCATGAGCGGGAGCAGATCATGACCACCA 250
| |||| | ||||||| ||||||| |||||||||||||||||||||
198 ATTGGCTCAGCTCATTAGTGTGCACGAGCGGGAGCAGATCATGACCACCA 247
251 ATGTCTGGCTGACCCAGGAGTGGGAAGATTATCGCCTCACCTGGAAGCCT 300
||||||||||||||||||||||||||| ||||||| |||||||||
248 ATGTCTGGCTGACCCAGGAGTGGGAAGATTACCGCCTCACATGGAAGCCT 297
301 GAAGAGTTTGACAACATGAAGAAAGTTCGGCTCCCTTCCAAACACATCTG 350
|| || || ||||| ||||||||| |||||||||||||||||||||
298 GAGGACTTCGACAATATGAAGAAAGTCCGGCTCCCTTCCAAACACATCTG 347
351 GCTCCCAGATGTGGTCCTGTACAACAATGCTGACGGCATGTACGAGGTGT 400
||||||||||||||| || ||||||||||||||||||||| ||| |
348 GCTCCCAGATGTGGTTCTATACAACAATGCTGACGGCATGTACGAAGTCT 397
401 CCTTCTATTCCAATGCCGTGGTCTCCTATGATGGCAGCATCTTCTGGCTG 450
||||||||||||||| ||||||||||||||||||||| |||||
398 CCTTCTATTCCAATGCTGTGGTCTCCTATGATGGCAGCATCTTTTGGCTA 447
451 CCGCCTGCCATCTACAAGAGTGCATGCAAGATTGAAGTAAAGCACTTCCC 500
|| ||||||||||||||||| ||||||||| || |||||||||
448 CCACCTGCCATCTACAAGAGTGCATGCAAGATTGAGGTGAAGCACTTCCC 497
501 ATTTGACCAGCAGAAGTGCACCATGAAGTTCCGTTTCGTGGACCTACGACC 550
||||||||||||||| ||||||||||||| || || |||||||||
498 ATTTGACCAGCAGAATTGCACCATGAAGTTTCGCTCATGGACCTACGACC 547
551 GCACAGAGATCGACTTGGTGTGAAGAGTGAGGTGGCCAGCCTGGACGAC 600
| || ||||| || ||||||| || ||||| ||||||| ||||| |||
548 GACTGAGATTGACCTGGTGTCAAAAGTGATGTGGCCAGTCTGGATGAC 597
601 TTCACACCTAGTGGTGAGTGGGACATCGTGGCGCTGCCGGGCCGCGGCAA 650
||||||| || || ||||||||| || ||||| ||||| |||||
598 TTCACACCCAGCGGGGAGTGGGACATCATCGCACTGCCAGGCCGACGCAA 647
651 CGAGAACCCGACGACTCTACGTACGTGGACATCACGTATGACTTCATCA 700
||||||| ||||||| || || ||||||||| |||||||||
648 CGAGAACCCAGACGACTCCACCTATGTGGACATCACCTATGACTTCATCA 697

701 TTCGCCGCAAGCCGCTCTTCTACACCATCAACCTCATCATCCCCTGTGTG 750
 698 TTCGTCGCAAACCACTCTTCTACACTATCAACCTCATCATCCCCTGCGTA 747
 751 CTCATCACCTCGCTAGCCATCCTTGTCTTCTACCTGCCATCCGACTGTGG 800
 748 CTCATCACCTCGCTGGCCATCCTGGTCTTCTACCTGCCCTCAGACTGTGG 797
 801 CGAGAAGATGACGTTGTGCATCTCAGTGTCTGCTGGCGCTCACGGTCTTCC 850
 798 TGAAAAGATGACACTTTGTATTTCTGTGCTGCTAGCACTCACGGTGTTC 847
 851 TGCTGCTCATCTCCAAGATCGTGCCTCCACCTCCCTCGACGTGCCGCTC 900
 848 TGCTGCTCATCTCCAAGATTGTGCCTCCACCTCCCTCGATGTACCGCTG 897
 901 GTCGGCAAGTACCTCATGTTACCATGGTGCTTGTACCTTCTCCATCGT 950
 898 GTGGGCAAGTACCTCATGTTTACCATGGTGCTAGTCACCTTCTCCATCGT 947
 951 CACCAGCGTGTGCGTGTCTCAACGTGCACCACCGCTCGCCCACCACGCACA 1000
 948 CACCAGCGTGTGTGTGCTCAATGTGCACCACCGCTCGCCTACCACGCACA 997
 1001 CCATGCGCCCTCGGTGAAGGTGCTCTTCTGAGAGCTGCCCGCGCTG 1050
 998 CCATGCGCCCTCGGTCAAGGTGCTCTTCTGAGAGCTGCCCACCTG 1047
 1051 CTCTTCATGCAGCAGCCACGCCATCATTGCGCCCGTCAGCGCCTGCGCCT 1100
 1048 CTCTTCTGCGAGCAGCCACGCCACCGCTGTGCACGTGAGCGTCTGCGCTT 1097
 1101 GCGGCGACGCCAGCGTGAGCGCGAGGGCGCTGGAGCCCTCTTCTTCCGCG 1150
 1099 GAGGAGGCGCCAGCGAGAGCGTGAGGGC...GAGGCGGTTTCTTCCGTG 1144
 1151 AAGCCCCAGGGGCGGACTCCTGCACGTGCTTCGTCAACCGCGCGTCCGTG 1200
 1145 AAGGTCCTGCGGCTGACCCATGTACCTGCTTTGTCAACCCTGCATCAGTG 1194
 1201 CAGGGGTGCGCGGGGCTTCGGGGCTGAGCCTGCACCAAGTGGCGGGCCC 1250
 1195 CAGGGCTTGGCTGGGGCTTCCGAGCTGAGCCCACTGCA...GCCGGCCC 1241
 1251 CGGGCGCTCAGGGGAGCCGTGTGGCTGTGGCCTCCGGGAGGCGGTGGACG 1300
 1242 GGGGCGCTCTGTGGGGCCATGCAGCTGTGGCCTCCGGGAAGCAGTGGATG 1291
 1301 GCGTGCGCTTCATCGCAGACCACATGCGGAGCGAGGACGATGACCAGAGC 1350
 1292 GCGTACGCTTCATTGCGGACCACATGCGAAGTGAGGATGATGACCAGAGT 1341
 1351 GTGAGTGAGGACTGGAAGTACGTGCCATGGTGATCGACCGCCTCTTCCT 1400
 1342 GTGAGGGAGGACTGGAAATACGTTGCCATGGTGATCGACCGCCTGTTCCT 1391

PstI

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1401 CTGGATCTTTGTCTTTGTCTGTGTCTTTGGCACCATCGGCATGTTCTGTC 1450
      |||
1392 GTGGATCTTTGTCTTTGTCTGTGTCTTTGGGACCGTCGGCATGTTCTGTC 1441
      |||
1451 AGCCTCTCTTCCAGAACTACACCACCACCACCTTCCTCCACTCAGACCAC 1500
      |||
1442 AGCCTCTCTTCCAGAACTACACTGCCACTACCTTCCTCCACCCTGACCAC 1491
      |||
1501 TCAGCCCCCAGCTCCAAGTGA 1521
      |||
1492 TCAGCTCCCAGCTCCAAGTGA 1512
```

(4)

10/14

1 ATGCCCCTGGCATGGCCCGGCGCTGCGGCCCGTGGCGCTGCTCCTTGG 50
1 ATGCTGGCTTGCATGGCCGGGCACTCCAATCAATGGCGCTGTTC...AG 47
51 CTTCCGGCCTCCTCCGGCTGTGCTCAGGGGTGTGGGTACGGATACAGAGG 100
48 CTTCAGCCTTCTTTGGCTGTGCTCAGGGGTTTTGGGAAGTACACAGAGG 97
101 AGCGGCTGGTGGAGCATCTCCTGGATCCTTCCCGCTACAACAAGCTTATC 150
98 AGCGGCTAGTGGAGCATCTCTTAGATCCCTCCCGCTATAACAAGCTGATT 147
151 CGCCCAGCCACCAATGGCTCTGAGCTGGTGACAGTACAGCTTATGGTGTG 200
148 CGTCCAGCTACTAACGGCTCTGAGCTGGTGACTGTACAGCTCATGGTATC 197
201 ACTGGCCCAGCTCATCAGTGTGCATGAGCGGGAGCAGATCATGACCACCA 250
198 ATTGGCTCAGCTCATTAGTGTGCACGAGCGGGAGCAGATCATGACCACCA 247
251 ATGTCTGGCTGACCCAGGAGTGGGAAGATTATCGCCTCACCTGGAAGCCT 300
248 ATGTCTGGCTGACCCAGGAGTGGGAAGATTACCGCCTCACATGGAAGCCT 297
301 GAAGAGTTTGACAACATGAAGAAAGTTCGGCTCCCTTCCAAACACATCTG 350
298 GAGGACTTCGACAATATGAAGAAAGTCCGGCTCCCTTCCAAACACATCTG 347

FIG. 9a-1

11/14

351 GCTCCCAGATGTGGTCCTGTACAACAATGCTGACGGCATGTACGAGGTGT 400
|||
348 GCTCCCAGATGTGGTTCTATACAACAATGCTGACGGCATGTACGAAGTCT 397
|||
401 CCTTCTATTCCAATGCCGTGGTCTCCTATGATGGCAGCATCTTCTGGCTG 450
|||
398 CCTTCTATTCCAATGCTGTGGTCTCCTATGATGGCAGCATCTTTTGGCTA 447
|||
451 CCGCCTGCCATCTACAAGAGCGCATGCAAGATTGAAGTAAAGCACTTCCC 500
|||
448 CCACCTGCCATCTACAAGAGTGCATGCAAGATTGAGGTGAAGCACTTCCC 497
|||
501 ATTTGACCAGCAGAACTGCACCATGAAGTTCCGTTTCGTGGACCTACGACC 550
|||
498 ATTTGACCAGCAGAAATTGCACCATGAAGTTTCGCTCATGGACCTACGACC 547
|||
551 GCACAGAGATCGACTTGGTGCTGAAGAGTGAGGTGGCCAGCCTGGACGAC 600
|||
548 GTACTGAGATTGACCTGGTGCTCAAAAGTGATGTGGCCAGTCTGGATGAC 597
|||
601 TTCACACCTAGTGGTGAGTGGGACATCGTGGCGCTGCCGGGCGCGGCAA 650
|||
598 TTCACACCCAGCGGGGAGTGGGACATCATCGCACTGCCAGGCCGACGCAA 647
|||
651 CGAGAACCCCGACGACTCTACGTACGTGGACATCACGTATGACTTCATCA 700
|||
648 CGAGAACCCAGACGACTCCACCTATGTGGACATCACCTATGACTTCATCA 697
|||

FIG.9a-2

12/14

701 TTCGCCGCAAGCCGCTCTTCTACACCATCAACCTCATCATCCCCTGTGTG 750
|||||
698 TTCGTCGCAAACCACTCTTCTACACTATCAACCTCATCATCCCCTGCGTA 747
751 CTCATCACCTCGCTAGCCATCCTTGTCTTCTACCTGCCATCCGACTGTGG 800
|||||
748 CTCATCACCTCGCTGGCCATCCTGGTCTTCTACCTGCCCTCAGACTGTGG 797
801 CGAGAAGATGACGTTGTGCATCTCAGTGCTGCTGGCGCTCACGGTCTTCC 850
|||||
798 TGAAAAGATGACACTTTGTATTTCTGTGCTGCTAGCACTCACGGTGTTCC 847
851 TGCTGCTCATCTCCAAGATCGTGCCTCCCACCTCCCTCGACGTGCCGCTC 900
|||||
848 TGCTGCTCATCTCCAAGATTGTGCCTCCCACCTCCCTCGATGTACCGCTG 897
901 GTCGGCAAGTACCTCATGTTTACCATGGTGCTTGTCACCTTCTCCATCGT 950
|||||
898 GTGGGCAAGTACCTCATGTTTACCATGGTGCTAGTCACCTTCTCCATCGT 947
951 CACCAGCGTGTCGTGCTCAACGTGCACCACCGCTCGCCCACCACGCACA 1000
|||||
948 CACCAGCGTGTCGTGCTCAATGTGCACCACCGCTCGCCTACCACGCACA 997
1001 CCATGGCGCCCTGGGTGAAGGTCGTCTTCCTGGAGAAGCTGCCC GCGCTG 1050
|||||
998 CCATGGCCCCCTGGGTCAAGGTGGTCTTCCTGGAGAAGCTGCCCACCCTG 1047

FIG. 9b-1

| | | |
|------|---|------|
| 1051 | CTCTTCATGCAGCAGCCACGCCATCATTGCGCCCGTCAGCGCCTGCGCCT | 1100 |
| 1048 | CTCTTCCTGCAGCAGCCACGCCACCGCTGTGCACGTCAGCGTCTGCGCTT | 1097 |
| 1101 | GCGGCGACGCCAGCGTGAGCGCGAGGGCGCTGGAGCCCTCTTCTTCCGCG | 1150 |
| 1098 | GAGGAGGCGCCAGCGAGAGCGTGAGGGC...GAGGCGGTTTTCTTCCGTG | 1144 |
| 1151 | AAGCCCCAGGGGCCGACTCCTGCACGTGCTTCGTCAACCGCGCGTCGGTG | 1200 |
| 1145 | AAGGTCCTGCGGCTGACCCATGTACCTGCTTTGTCAACCCTGCATCAGTG | 1194 |
| 1201 | CAGGGGTGCGCCGGGGCCTTCGGGGCTGAGCCTGCACCAGTGGCGGGCCC | 1250 |
| 1195 | CAGGGCTTGGCTGGGGCTTTCGAGCTGAGCCCACTGCA...GCCGGCCC | 1241 |
| 1251 | CGGGCGCTCAGGGGAGCCGTGTGGCTGTGGCCTCCGGGAGGCGGTGGACG | 1300 |
| 1242 | GGGGCGCTCTGTGGGGCCATGCAGCTGTGGCCTCCGGGAAGCAGTGGATG | 1291 |
| 1301 | GCGTGCGCTTCATCGCAGACCACATGCGGAGCGAGGACGATGACCAGAGC | 1350 |
| 1292 | GCGTACGCTTCATTGCGGACCACATGCGAAGTGAGGATGATGACCAGAGT | 1341 |
| 1351 | GTGAGTGAGGACTGGAAGTACGTCGCCATGGTGATCGACCGCCTCTTCCT | 1400 |
| 1342 | GTGAGGGAGGACTGGAATAACGTTGCCATGGTGATCGACCGCCTGTTTCCT | 1391 |

SUBSTITUTE SHEET

14/14

1401 CTGGATCTTTGTCTTTGTCTGTGTCTTTGGCACCATCGGCATGTTCTGC 1450
|||||
1392 GTGGATCTTTGTCTTTGTCTGTGTCTTTGGGACCGTCGGCATGTTCTGC 1441
|||||
1451 AGCCTCTCTTCCAGAACTACACCACCACCACCTTCCTCCACTCAGACCAC 1500
|||||
1442 AGCCTCTCTTCCAGAACTACACTGCCACTACCTTCCTCCACCCTGACCAC 1491
|||||
1501 TCAGCCCCCAGCTCCAAGTGA 1521
|||||
1492 TCAGCTCCCAGCTCCAAGTGA 1512

FIG.9c